Exactus™ BAM

REAL-TIME PARTICULATE MONITOR

The Exactus™ BAM is a portable, real-time beta gauge built to satisfy users, regulators and those from the health community by providing truly accurate, precise and automatic measurement of fine particulate matter. (Accuracy exceeds US EPA PM_{10} FEM requirements, range 0 to 10 mg/m^3.)

The Exactus™ BAM automatically measures and records airborne PM_{10} or $PM_{2.5}$ particulate concentration levels using the principle of beta ray attenuation. This method provides a simple determination of concentration in units of milligrams of particulate per cubic meter of air.

FEATURES

- Lightweight, suitcase-sized portability
- 15 minute rapid deployment
- Sturdy construction, weatherproof enclosure (temp range - 25 to +50°C)
- Mains powered or optional solar powered system
- Internal data logger
- External AC vacuum pump standard
- Real-time PM_{10} concentration
- US EPA & AS/NZ Standards compliant monitor for PM_{10}
- Temperature/RH/Pressure sensor
- Volumetric flow control.

APPROVALS

- US EPA approval

BENEFITS

The Exactus™ BAM is designed as a simple, compact and self-contained beta gauge, for portable applications where rapid deployment and short interval real-time measurements are required. Deployed in approximately 15 minutes.

- Reliable performance complemented with a one year warranty
- Accuracy and precision approval with US EPA requirements for PM_{10} measurement
- Real-time, accurate results without correction factors, regardless of season or geographic location
- True ambient sampling provides accurate measurement of semi-volatile nitrates and organic compounds
- Rugged, lightweight construction is easily mounted on a tripod in minutes
- All-weather construction allows for true ambient sampling
- Operates on 115 / 240 AC or 12 VDC (optional)
- Easy setup through an intuitive menu system, advanced GUI and a touchscreen display.

SPECIFICATIONS

Range: Concentration	- 15 µg/m³ to 10 mg/m³
units: Measurement	µg/m³ or mg/m³
cycle:	Hourly measurements, time resolution to 1 minute
Noise:	(2σ) (24 hour) Less than 1 µg/m³
Lower detectable limit:	(2σ) (1 hour) Less than 10 µg/m³ (2σ) (24 hour) Less than 2 µg/m³
Accuracy:	Exceeds US EPA Class III PM_{10} FEM standards for additive and multiplicative bias
Resolution:	1 µg/m³
Sample time:	1 hour
STP reference:	0 °C, 20 °C, 25 °C at 101.3 kPa
Sample flow rate:	16.7 L/min inlet flow rate; actual volumetric flow
Temperature range:	- 25 to 40 °C
Humidity range:	0 to 90 % RH; noncondensing
Inlet humidity control:	Actively controlled inlet heater module; 0 to 50 °C filter temperature set point
Operating power:	100 - 240 VAC, 50 - 60 Hz (autoranging)
Power consumption:	460 W 3 A @ 115 VAC, 2 A @ 230 VAC
Dimensions:	410 x 460 x 310 mm
Weight top unit:	15.9 kg
Weight pump box:	18.1 kg
Weight total:	34.0 kg
External sensor:	Met One Model 597
• Ambient temperature	- 50 to 70 °C
• Relative humidity	0 to 98 % RH
• Barometric pressure	375 to 825 mmHg

COMMUNICATION

Analog output

- Menu selectable 4 - 20 mA or 0 - 1 VDC, 0 - 2.5 VDC or 0 - 5 VDC

Alarm output

- 1 channel; dry normally open contact; 1 A at 125 VAC or 60 VDC maximum
- Filter, flow, power and operation failure

Serial interface

- RS-485; 2 channels; half duplex
- RS-232 and USB; 1 channels; full duplex (shared common serial output)

Baud rates

- 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200

Compatible software

- Airodis™, WinAQMS™, HyperTerminal®

DATA LOGGING

Internal data logger

- 8 days when set to 1 minute average
- 1.3 years set to 60 min average

External data storage

- 1 USB flash drive device

OPTIONS & ACCESSORIES

- Volumetric Flow Calibration Kit
- Zero Calibration Kit
- TSP Inlet
- PM_{10} Inlet Head (EPA specification)
- $PM_{2.5}$ Sharp-Cut Cyclone
- Wind Speed and Direction Sensor
- Sonic Wind Speed and Direction Sensor
- Ambient Temp, RH and Barometric Pressure Sensor
- Filter Tape, Roll
- External Pump (240 or 110 VAC)
- Printed User Manual (a soft copy of the user manual is supplied on the ECOTECH resources USB stick with each analyser).

Pictured left: Exactus BAM Solar.
Real-time PM_{10} monitoring.
AS/NZS 3580.9.11-2008.
Solar, battery or mains powered.
Internal logging of wind sensor data.
Rugged construction.
Compact weatherproof enclosure.
Operating range - 25 to 50 °C.
3 monthly calibration interval.

bsi ISO 9001 Quality Management Systems CERTIFIED ISO 45001 Occupational Health and Safety Management CERTIFIED

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